A New Genus and Five New Species of Scatopsidae from California, Mexico, El Salvador and Peru[1]

(Diptera)

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Material sent to me for identification in 1977 from the California Academy of Sciences by Paul Arnaud contains a new species of *Swammerdammella,* a new *Psectrosciara* and an additional species that necessitated a reexamination of two species included in my 1956 paper as the dampfi complex in *Rhexoza.* The reexamination has required the erection of a new genus, below. In addition 2 species from an earlier California Academy of Science loan are described as a new species of *Rhegmoclemina* and a new species of *Colobostema.* All are from California, Mexico, El Salvador and Peru.

When I reviewed the genus *Rhexoza* in 1975 I deliberately ignored the two species included in the group I had termed the dampfi complex of *Rhexoza* in 1956. This was because these were 2 rather different species, and while they fit in the tribe Swammerdamellini they both differed in characteristics that I considered necessary for inclusion in the described genera making up that tribe. The discovery of a new species very near *R. dampfi* (Duda) has prompted me to erect a genus for these two species. *Rhexoza cryptica* Cook, originally placed with *R. dampfi,* must be placed in *Swammerdamella* despite the fact that it lacks the "key" character for inclusion in that genus. Segment 7 is not concealed in segment 6 in the male and tergum 7 is differently modified (see Cook 1956, Fig. 5D). Aside from this, it has identical head structure, maxillary palp form, chaetotaxy and genital vesica and apodeme size. The wing venation and antennal structure are like *S. pygmaea* (Loew). There is also an aedeagal plate in the male which I overlooked in my earlier description in addition to the posterior median process.

Akorhexoza, new genus

Antennae 10-segmented (8 flagellomeres) slightly longer than height of head capsule; cardo-stipites broad, band-like, fused mesally and setose; maxillary palpi large, rather reniform; proboscis nearly as long as head capsule height; labella elongate, rather slender; occiput sparsely setose posteriorly, very few microtrichia only near foramen; eyes with setae between facets. Thorax with triangular spiracular sclerite, longer than

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high; the usual pleural setae, including lower epimerals; wing venation similar to *Rhexoza*, costal-radial complex ending before middle of wing; M fork longer than stem; M_1 and M_2 diverging to wing margin; setae dorsally on costal-radial complex; wing membrane beset with microtrichia. Male abdomen with 7 evident segments; 7 pair of spiracles; with modified 8th tergum; sterna absent on segments 1-4; small triangular sclerite on 5 and 6; terga present on 1-7; segment 7 modified; sternum 7 with bilobed posterior expansion, tergum 7 posteriorly deeply emarginate. Tergum 8 either bifurcate or truncate; genitalia with sclerotized penis, reduced penis valves and an elongate median process which may be the fused gonocoxites. Female abdomen with 7 segments; sternum absent on 1-6; sternum 7 sclerotized; terga 1-7 sclerotized. Segment 8 and terminalia of female very different in the 2 included species. Tergum either divided or entire; cerci large or small, 8th valvifers present or absent. Type species of the genus: *Akorhexoza dampfi* (Duda).

Diagnosis.—Length of costa between R_1 and R_3 greater than length of R_1; abdominal segment 7 visible in males; males with tergum 7 not produced posteriorly, with an obvious tergum 8 and with sternum 7 deeply emarginate posteriorly.

The two included species can be distinguished readily. *A. cactivora* has tergum 8 apically truncate in the male and the female has paired posteriorly projecting, acute valvifers. *A. dampfi* has tergum 8 produced into 2 posteriorly-directed points in the male and the female has apically rounded setose valvifers.

Akorhexoza dampfi (Duda), new combination

This species was redescribed in 1956 but some additional characters should be added to that redescription.

Male.—Flagellomeres with about 13 setae in a single whorl in addition to microtrichia and campaniform sensilla; maxillary palpi 0.17 mm long: labella slender, nearly as long as palpi; rostrum long; occiput sparsely setose, with 3 campaniform sensilla on each side; cardo-stipites conspicuous, with about 18 setae on each side.

Supraalar setae 13-21; preepisternals 16, anepisternals 23; upper episternals 13; subalars 21; subspiraculars 14-21 (2 large); lower epimerals 13; pedicellars 3-6. Wings 1.90-2.17mm long; R_1 and R_3 with only dorsal setae; R_3 terminates before middle of wing; section 2 of costa about 1/3 longer than R_1; membrane microtrichiose. Abdominal terga 2-6 rectangular, sparsely setose; tergum 1 anteriorly emarginate, narrower than succeeding terga; tergum 7 yellow, posteriorly emarginate, with long marginal setae and small sparse setae anteriorly; tergum 8 sclerotized, yellow-brown, posteriorly produced in 2 apically acute triangular processes; sterna 1-4 unsclerotized; sterna 5 and 6 small, (less than ⅓ width of terga) triangular, sparsely setose; sternum 7 deeply emarginate posteriorly, no tooth on posterior margin; no sternum 8. Genitalia with small setose penis valves; median ventral process with a few small marginal setae, penis conspicuous, sclerotized.

Females.—Very like male in size and color. Cardo-stipites with 25 setae on each side. Supraalar setae 25-29; preepisternals 20; anepisternals 41; upper episternals 18; subalars 25; subspiraculars 22 (3 large); lower epimerals 13, pedicillars 5. Wings as in male. Abdominal terga 1-6 as in male; tergum 7 with a crescent shaped posterior emargination; all tergites sparsely setose; sterna 1-6 not sclerotized, sternum 7 sclerotized, with a median rounded emargination, produced triangularly laterad of emargination. Tergum 8 divided by large cerci, sparsely setose, microtrichiose, yellow; tergum 8 produced posteriorly as two adjacent apically rounded, setose processes. Redescription based on 1 ♂, 1 ♀ from Brownsville, (Mexico) *[sic]* 10-21-48.

Akorhexoza cactivora, new species

Male.—About 2.00 mm long; color dark grey brown, membrane pale; head and thorax shining, abdomen dull (specimens all slide mounted). Antennal flagellomeres with a single whorl of about 13 short, stout setae in addition to campaniform sensilla and microtrichia; maxillary palpi large, 0.16 mm long; labella slender but nearly as long as palpi; rostrum long; cardostipites conspicuous with 11-17 setae on each side; occiput sparsely setose with vertex more densely setose. Supraalar setae 15; preepisternals 10-11; anepisternals 22-23; upper episternals 8; subalars 7-9; subspiraculars 6-9 (2 large); lower epimerals 1-5; pedicellars 3. Wings 1.75-1.90 mm long; R_1 and R_3 with dorsal setae only; R_3 terminates before middle of wing; section 2 of costa scarcely longer than R_1; membrane microtrichiose. Abdominal tergites 2-7 conspicuous, rectangular, wider than long, sparsely setose; tergum 1 anteriorly emarginate, short; tergum 8 (Fig. 3) dark, heavily sclerotized, produced posteriorly in a tuncate process; tergum 7 (Fig. 2) large, longer than preceding and deeply emarginate posteriorly; sterna 1-4 unsclerotized, 5 and 6 small, triangular; sternum 7 (Fig. 2) large, deeply emarginate posteriorly, a strong tooth-like process on each side of emargination; no evident sternum 8. Genitalia (Fig. 1) very like that of *dampfi* except penis valves less conspicuous, with fewer setae; median process (gonocoxites) with a regular row of long setae on each side ventrally.

Female.—Size and coloration as in male. Maxillary palpi 0.15 mm long; cardo-stipites with 12-17 setae on each side; supraalar setae 13-15; preepisternals 6-10; anepisternals 10-23; upper episternals 6; subalars 6-8; subspiraculars 5-6 (2 large); lower epimerals 2-4; pedicellars 3. Wings as in male, 1.70 mm long; abdominal terga 1-6 as in male; sterna 1-6 unsclerotized; sternum 7 sclerotized; all sclerites sparsely setose, setae small, tergum 8 small, with a few setae and microtrichia laterally, mesally bare. Cerci small, setose and microtrichiose. Genitalia (Fig. 4) with a pair of apically acute valvifers fused with sternum 8; very distinct from terminalia of ♀ *dampfi*.

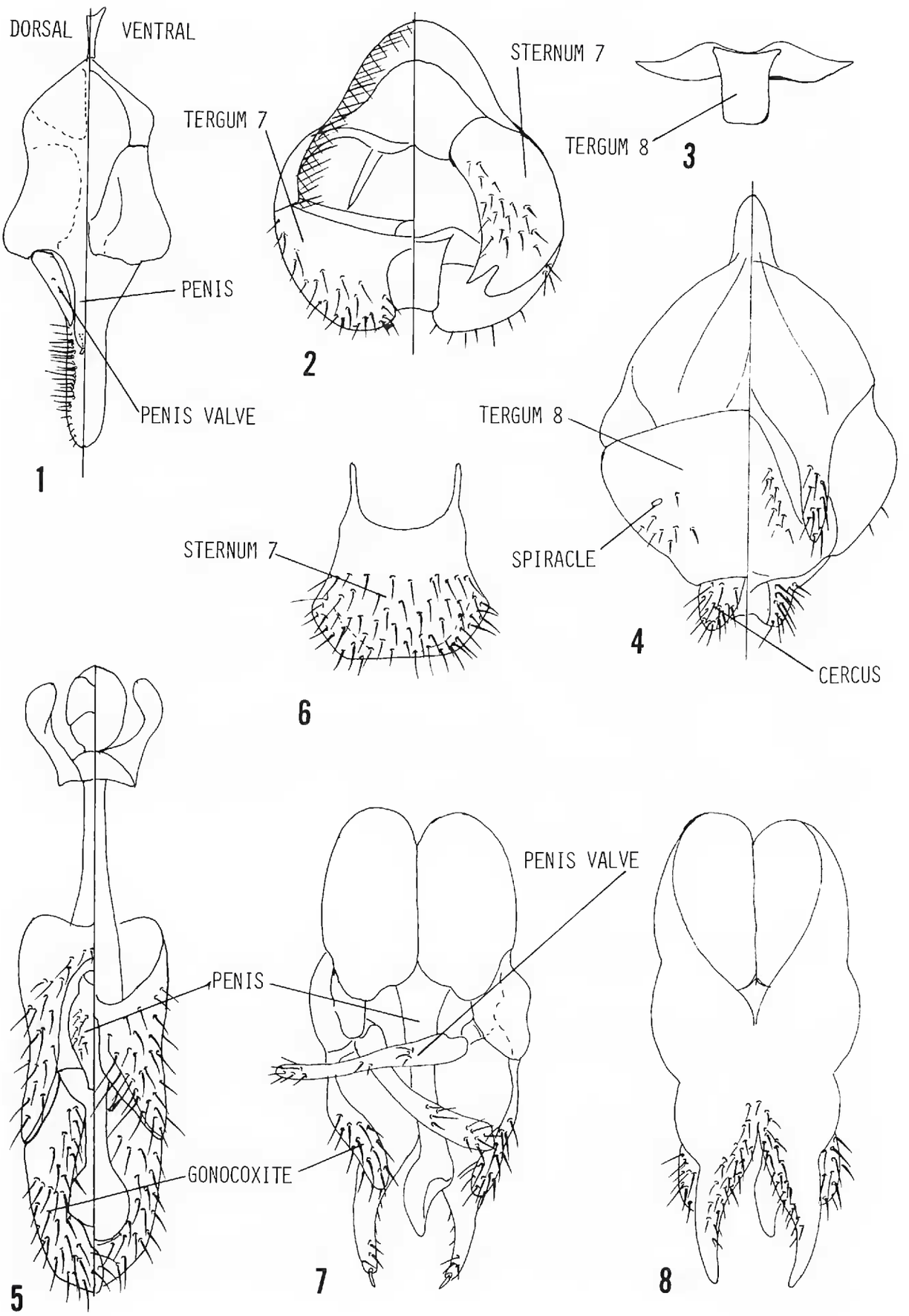
Holotype ♂. N. San Miguel de Allende, Guanajuato, Mexico. 4-VIII-1966, reared *ex Ferrocactus*. In collection of University of Minnesota. Paratypes: 1 ♀ same date as holotype, in University of Minnesota collection; 1 ♂, 1 ♀, Teotihuacan pyramid to the sun, Mexico. 27-XII-1970, (P.H. & M. Arnaud), at flowers of *Cassia tomentosa* L.f. [sic] in collection of California Academy of Sciences.

Psectrosciara arnaudi, new species

Male.—Total length 2.5 mm. Color dark blackish brown; head and thorax shining, abdomen dull; legs unicolorous with body except hind femora somewhat darker; halteres brown. Maxillary palpi 0.112 mm long; labella small, 0.15 mm; rostrum short; no evident cardo-stipites; gular area partially sclerotized, bearing some setae; head capsule posterior to eyes with short setae and at least 3 pairs of campaniform sensilla on lower half; antennae 10-segmented, with numerous short setae. Supraalar setal row not particularly distinct, about 6-7 setae in this position; upper episternals 7; anepisternals 24; preepisternals 40+; subalars 12; subspiraculars 8; lower epimerals 0. Wings pale brown, beset with microtrichia; setae on veins and membrane behind M_2; veins conspicuous, R_1 and R_2 darker than those posteriorly; M_1 scarcely connected to M_2 at base. Genitalia (Fig. 5) similar to those of *P. oregonensis* Cook; dorsal process small, detached from tergum 8.

Female. — Unknown.

Holotype ♂ Mexico, Baja California, 22 miles S. San Vincente, 300 ft., 6 April 1969. (Stanley C. Williams). In collection of California Academy of Sciences.



Figs. 1-4. *Akorhexoza cactivora.* Fig. 1. male genitalia; Fig. 2. male segment 7; Fig. 3. male tergum 8; Fig. 4. female genitalia; Fig. 5. *Psectrosciara arnaudi,* male genitalia. Figs. 6-8. *Rhegmoclemina acrolophia.* Fig. 6. male sternum 7; Fig. 7. male genitalia, dorsal aspect; Fig. 8. male genitalia, ventral aspect.

This will key to couplet 3 in my 1958 paper along with *P. bakeri* Cook and *P. discata* Cook. The genitalia, however, have stout, uncurved gonocoxites and a median ventral process not evident in those species.

Rhegmoclemina (Neorhegmoclemina) acrolophia, new species

Male.—Length about 2.5 mm; dark blackish brown, head and thorax shining, abdomen dull, all concolorous. Antenna with 10 flagellomeres, each with a single whorl of about 19 long setae as well as microtrichia and campaniform sensilla; maxillary palpi short (0.075 mm), ovate; cardo-stipites indistinct, fused mesally, with 13 setae on each side; rostrum short, less than head capsule height; occiput setose with long setae, microtrichiose posteriorly; eyes with setae between facets. Spiracular sclerite triangular; supraalar setae 14; preepisternals 18; anepisternals 14; upper episternals 9; subalars 11; subspiraculars 7 (2 large); lower epimerals 0; pedicellars 0. Wing length about 2.5 mm, wing dull, densely microtrichiose; a few setae dorsally on Cu_{1b}; section 2 of costal margin short, shorter than R_3. Abdominal terga 1-6 sparsely setose, setae more abundant on posterior segments; sternum 1 absent; sterna 2-6 like terga, with longer more numerous setae; tergum 7 short, with deep, rounded posterior emargination; sternum 7 (Fig. 6) shieldshaped, apodemes well separated; all sclerites with short, dense microtrichia; spiracles present on segments 1-7. Genitalia (Figs. 7 and 8) similar to those of the African species *R. chaetophora* Cook and *R. divergens* Cook. Genital capsule produced ventrally as 2 long, slender, setose processes; the processes tipped by 2 or 3 setae and a blunt spiniform seta; penis valves dark, elongate, heavily sclerotized and assymetrical, each with few setae and/or campaniform sensilla apically; gonocoxites dark, heavily setose; penis stout, expanded apically, apex assymetrical.

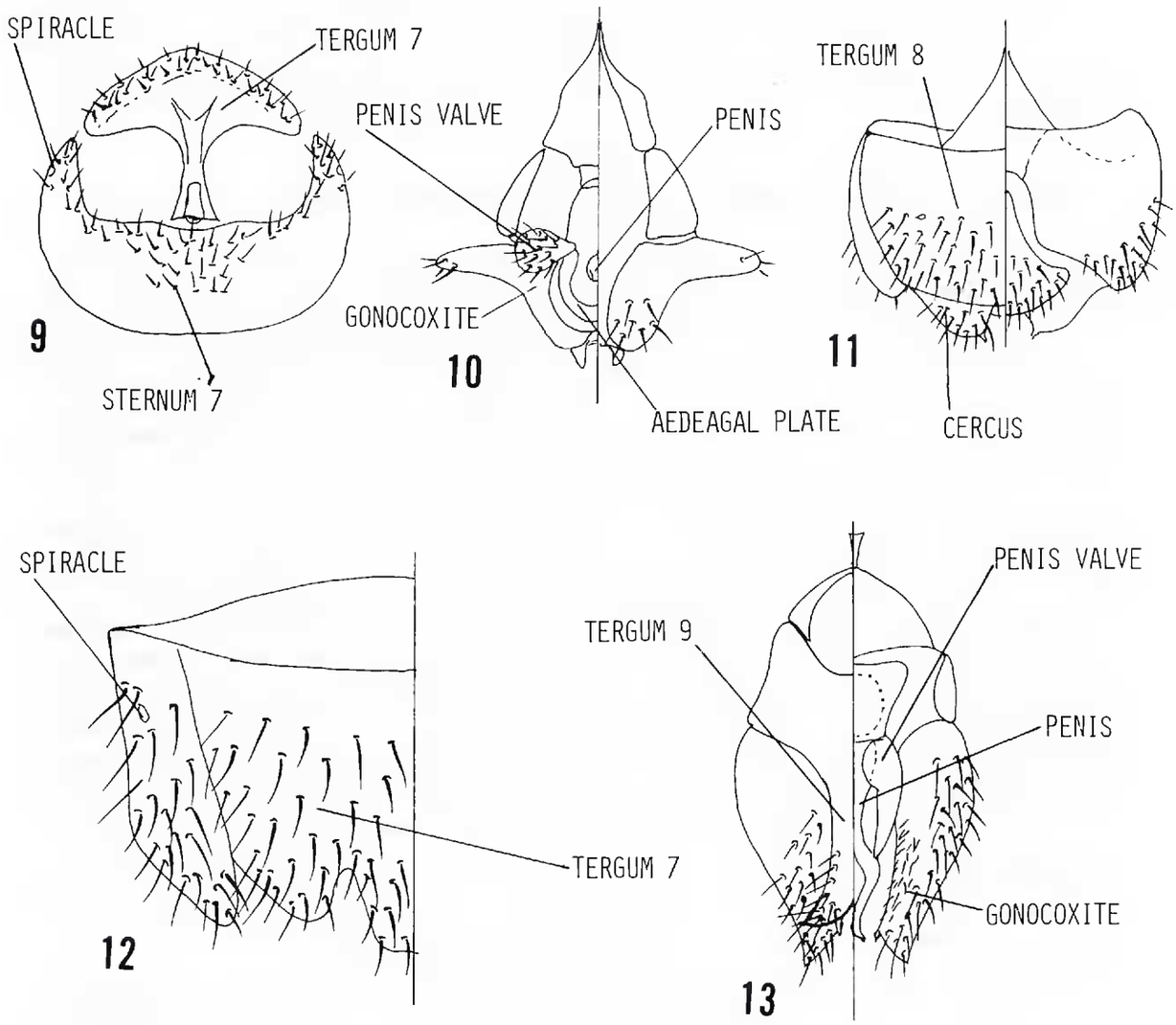
Holotype ♂. Peru, West Crest Carpish Mountains, 40 Mi S.W. Tingo Maria. 17.X.1954 (Schlinger and Ross). In collection of California Academy of Sciences.

The only other described southern South American species is *Rhegmoclemina constricta* (Duda) from Chile. *R. acrolophia* has very different genitalia from those illustrated by Edwards in which there seems to be but a single pair of posteriorly directed appendages.

Swammerdamella glochis, new species

Male.—Length 0.90 mm; blackish brown, dull, unicolorous except tarsi pale yellowish-white; halteres dark. Antennae damaged in the only specimen; maxillary palpi large, 0.10 mm long; cardo-stipites with 3 setae on each side, microtrichiose; occiput sparsely setose, microtrichiose. Supraalar setae 10; preepisternals 3; anepisternals 10; upper episternals 5; subalars 6; subspiraculars 2; lower epimerals 0; pedicellars 1. Wings damaged on only available specimen. Abdominal terga and sterna sparsely setose, microtrichiose; segment 7 largely concealed in segment 6; tergum 6 longer than preceding terga, without evident microtrichia except near anterior margin; segment 7 (Fig. 9) similar to that of *S. pusilla,* no specialized seta groups; genital vesica and apodemes 0.20 mm long. Genitalia (Fig. 10) with triangular gonocoxite; penis valves small, rounded lobes with few setae; aedeagal plate bluntly pointed, wider than long.

Female.—Total length 1.05 mm, wing length 0.99 mm with typical venation, colored like male; maxillary palpi 0.11 mm long; cardo-stipites with 6 setae on each side; head otherwise as in male. Supraalar setae 9; preepisternals 2; anepisternals 9; upper episternals 5; subalars 4; subspiraculars 1-2, lower epimerals 0; pedicellars 1. Seven abdominal seg-



Figs. 9-11. *Swammerdamella glochis.* Fig. 9. male segment 7; Fig. 10. male genitalia; Fig. 11. female genitalia; Figs. 12-13. *Colobostema leechi.* Fig. 12. male tergum 7; Fig. 13. male genitalia.

ments; all sclerites sparsely setose and microtrichiose; spermatheca spherical .075 mm in diameter. Genitalia (Fig. 11) with tergum 8 rounded posteriorly, concealing larger cerci beneath, with irregular rows of setae, all microtrichiose; sternum 8 bilobed, microtrichiose, setae only on posterior margin laterally.

Holotype ♂. El Salvador, Quezaltepque, 500 M. VI-19-62. (D.Q. Cavagnaro and M.E. Irwin). Paratype ♀, same data as holotype. In collection of California Academy of Sciences.

This is the only described *Swammerdamella* from Central America with a median process on tergum 7.

Colobostema leechi, new species

Male.—Length 2.25 mm, dark grey-brown, unicolorous, dull; wings infuscated, veins conspicuous. Antennae missing in only specimen; maxillary palpi short, ovate .08 mm long; labella small, about twice as long as maxillary palpi; rostrum short; cardo-stipites

not evident; occiput sparsely setose, microtrichiose. Eyes with setae and microtrichia between well-separated facets. Anterior spiracular plate as high as long, triangular; no supraalar setae; no preepisternal setae; anepisternal setae numerous on anterior margin; upper episternal setae 6; subalars 12, subspiraculars 11; lower epimerals 10. Wings 2.65 mm long, faintly brownish, veins obvious, membrane microtrichiose, costa and radial complex with setae; 2nd section of costal margin subequal to section 3; M_2 subequal to base M. Abdomen with terga and sterna sparsely setose, densely microtrichiose; segments 1-6 unmodified; tergum 7 (Fig. 12) reduced laterally, trilobed on posterior margin; sternum (Fig. 12) expanded dorsally to include 7th spiracle; genital vesica and apodemes 0.33 mm long. Genitalia (Fig. 13) with tergum 9 produced posteriorly, terminating in 2 divergent points; gonocoxite setose, emarginate distally; penis valves swollen basally, acute apically; penis somewhat sinuous, not projecting beyond gonocoxites. Segment 7 very similar to those of European species *C. triste* (Zetterstedt) and *C. nigripenne* (Meigen) with spiracles in sternum rather than tergum as other North American *Colobostema.*

Holotype ♂. Mill Valley, Marin Co. California, 10-IV-40, (H.B. Leech) collector. In collection of California Academy of Sciences.

This species differs from the other American *Colobostema* with unbanded legs in having a truncate median lobe on the posterior margin of tergum 7 rather than a median incision.

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